INDEX OF PAPERS

Analysis of Coal-Oil Mixture Sedimentation by		Effect of Geometrical Arrangement and Interdrop	
Modified Continuity Wave Theory — James M.	4177	Forces on Coalescence Time — D.K. Vohra and	438
Ekmann and George E. Klinzing Analysis of Fluidized Bed Catalytic Cracking Re-	417	S. Hartland Effect of Heat Flux on Pressure Drop in Low Pres-	200
generator Models in an Industrial Scale Unit -		sure Flow Boiling in a Horizontal Tube — M.	
H.I. deLasa, A. Errazu, E. Barreiro and S.	F 40	Shoukri, R.J. Yanchis and E. Rhodes	149
SoliozAnnular Bed Reactor-Methanation of Carbon-Diox-	549	Effect of the Physical Properties of Gas on the Volume of Bubble Formed from a Submerged	
ide — Mark Davis, Graeme Fairweather and John		Single Orifice Hideki Tsuge, Yasumitsu Tanaka	
Yamanis	497	and Shin-ichi Hibino	569
Anodic Oxidation of Phenol for Waste Treatment	***	Effect of Saline Concentration on the Viscous Pro-	
- V. Smith de Sucre and A.P. Watkinson	52	perties of Lignite Water Suspensions, The — Ron	941
Application of Robust and Non-interacting Control Schemes to a Heat-Exchanger Stirred Tank Proc-		Darby and Mark W. Mallett Effect of Solid Particles in Liquid-phase on Liquid-	341
ess, The — P.A. Taylor, J.D. Wright and T. Tu	109	side Mass Transfer Coefficient — M. Miyachi, A.	
Batch Cultivation of Kluyveromyces Fravilis in		Iguchi, S. Uchida and K. Koide	640
Cheese Whey - Denis Beausejour, Anh Leduy,		Effect of Surface Roughness on the Rate of Mass	
and Rubens S. Ramalho	522	Transfer to a Pipe Wall in the Mass Transfer Entry Region — G.H. Sedahmed, M. Nagy Soli-	
Blood Oxygenation in a Packed Column — Jose C. Merchuk	133	man and N.S. El-Kholy	693
Bubble Pumping in Cocurrent Gas-Liquid Flow and	100	Electrochemical Simulation of Heat and Mass Trans-	
its Effect Upon Conversion in Continuous Fer-		fer in Agrometeorology - P.H. Schuepp	164
mentation — Emil Wick	297	J. Peters and C.A. Shook	430
Capsule Hoist System for Vertical Transport of		Entrained Coal Gasifiers: Modeling the Particle	200
Coal and Other Mineral Solids — L.Y. Hwang, D.J. Wood and D.T. Kao	317	Acceleration — H. deLasa and L.K. Mok	658
Characterization of Zeolite Acidity I. The Cracking	OII	Entrainment of Particles from a Pilot Scale Fluid-	-
of 2 Mole % n-Butane over a Fixed Zeolite Bed		ized Bed — S.E. George and J.R. Grace	279
— H. Rastelli, Jr., B.M. Lok, J.A. Duisman, D.E.		Estimation of Critical Data by Equation of State — G. Schmidt and H. Wenzel	527
Earls and J.T. Mullhaupt		Etude des Isothermes d'Adsorption de Surfactants	
Velocity Distribution and Pressure Gradient in		Ioniques sur des Fibres de Laine Carbonisée —	
the Laminar-Laminar and Laminar-Turbulent		Francis Perineau, Jacques Molinier et Antoine	00
Regimes — Chester C-C Wang and M.E. Charles	668	Gaset Etude Théorique et Expérimentale de la Formation	82
Coherent Particle Oscillation in Fluidized Beds — T.E. Broadhurst and H.A. Becker	257	d'une Couche Limitée par Convection Libre dans	
Comparison of Spouting and Jetting in Round and	201	une Eau à Basse Température — P. Vasseur et	
Half-Round Fluidized Beds, A — D. Geldart, A.		L. Robillard	24
Hemsworth, R. Sundavadra and K.J. Whiting	638	Examination of a Model for Oscillating Heterogene- ously Catalyzed Reactions — David T. Lynch and	
Computation of Optimal Control Policy with Sin-	EET	Sieghard E. Wanke	766
gular Subarc — K.V. Reddy and Asghar Husain Computer Generated Time and Distance Values of	557	Experimental Determination of Air-H2S Equilibria	
Nutrient Constituents with Applications to Timed-		Under Claus Furnace Conditions — Howard A.	200
Release Capsules — C. Forgacs and R.N. O'Brien	465	Bennett and Axel Meisen Experimental Study of the Effect of Surface Char-	532
Concentration Distributions in Laminar Pipe Flow		acteristics and Material Thermal Properties on	
with Distorted Velocity Profiles — S.C. Jain and B.H. Chen	285	Dropwise Condensation, An — A.H. Abdelmessih,	
Control of a Distillation Column using Self-Tuning		Y. Rotenberg and A.W. Neumann	138
Regulators — S.A. Dahlqvist	118	Finite Difference Simulation of Die Swell for a	
Conversions and Temperature Rises in a Tabular Flow Reactor with Uncontrolled Wall Heat Trans-		Newtonian Fluid — G.A. Hill, C.A. Shook and M.N. Esmail	
fer — J.A. Golding, F. Vena and D. Gorowski	705	Finite Element Solution of Low Peclet Number	200
Dense and Extrusion Flow Regime in Gas-Solid		Fluid Flow in a Round Pipe with the Cauchy	
Transport, The - G.E. Klinzing and M.P. Mathur	590	Boundary Condition — S.L. Lee and G.J. Hwang	
Development of a Monitoring System for Ash De-		Flexible Solution Method for Generalized Equilibrium Stage Columns, A. — M.C. Li and R.J.	
posits on Boiler Tube Surfaces — A.K. Chambers, J.R. Wynnyckyj and E. Rhodes	230	Frost	
Development and Testing of a Method of Estimating	200	Flow Characteristics of a Laminar Swirling Imping-	
Sensible Heat Flux from Natural Surfaces Using		ing Jet: A Numerical Study — B. Huang, A.S.	
Remotely Sensed Surface Temperature — D.G.	100	Mujumdar and W.J.M. DouglasFlow of Rarefied Gases Through Long Tubes of Cir-	
Leckie, T.A. Black and P.A. Murtha Dispersion and Hold-up in Bubble Columns — Com-	189	cular Cross-Section, The — Ravindra Datta and	
parison of Rigid and Flexible Spargers — Richard		Robert C. Rinker	268
C. Rice, Jorma M.I. Tupperainen and Robert M.		Flow Regime Boundaries for an Interior Subchannel	
Hedge	677	of a Horizontal 37-Element Bundle — A.M.M. Aly Fluidized Bed Retort for Oil Sand, A. — J.K. Don-	
Dispersion of Aqueous Polymer Solutions Injected from a Point Source into Turbulent Water Flows		nelly, R.G. Moore, D.W. Bennion and A.E. Trenk-	
— O.K. El Reidy and B. Latto	662	walder	68
Drag Reduction by Fibers — R.S. Sharma	3	Forced Convection Heat Transfer to Boiling Binary	
Drift in Intermittent Two-Phase Flow in Horizontal	200	Mixtures — T.R. Ramamohan, A. Somalingeswara Rao and N.S. Srinivas	
Pipes — Martin E. Weber	398	Formulae for Mass Median and Mass Mean Drop	
C.G. Morris and W.Y. Svrcek	392	Diameters — J. Monaghan, G.A. Hill and W.G.	
Effect of Fin Conductance on Laminar Heat Trans-		Soucey	
fer Characteristics of Internally Finned Tubes,	054	Gas Absorption at a Liquid Surface Agitated by	
The — H.M. Soliman	251	Vortex Rings — A. Rohatgi and M.H.I. Baird	308

INDEX OF PAPERS

Analysis of Coal-Oil Mixture Sedimentation by		Effect of Geometrical Arrangement and Interdrop	
Modified Continuity Wave Theory — James M.	4177	Forces on Coalescence Time — D.K. Vohra and	438
Ekmann and George E. Klinzing Analysis of Fluidized Bed Catalytic Cracking Re-	417	S. Hartland Effect of Heat Flux on Pressure Drop in Low Pres-	200
generator Models in an Industrial Scale Unit -		sure Flow Boiling in a Horizontal Tube — M.	
H.I. deLasa, A. Errazu, E. Barreiro and S.	F 40	Shoukri, R.J. Yanchis and E. Rhodes	149
SoliozAnnular Bed Reactor-Methanation of Carbon-Diox-	549	Effect of the Physical Properties of Gas on the Volume of Bubble Formed from a Submerged	
ide — Mark Davis, Graeme Fairweather and John		Single Orifice Hideki Tsuge, Yasumitsu Tanaka	
Yamanis	497	and Shin-ichi Hibino	569
Anodic Oxidation of Phenol for Waste Treatment	***	Effect of Saline Concentration on the Viscous Pro-	
- V. Smith de Sucre and A.P. Watkinson	52	perties of Lignite Water Suspensions, The — Ron	941
Application of Robust and Non-interacting Control Schemes to a Heat-Exchanger Stirred Tank Proc-		Darby and Mark W. Mallett Effect of Solid Particles in Liquid-phase on Liquid-	341
ess, The — P.A. Taylor, J.D. Wright and T. Tu	109	side Mass Transfer Coefficient — M. Miyachi, A.	
Batch Cultivation of Kluyveromyces Fravilis in		Iguchi, S. Uchida and K. Koide	640
Cheese Whey - Denis Beausejour, Anh Leduy,		Effect of Surface Roughness on the Rate of Mass	
and Rubens S. Ramalho	522	Transfer to a Pipe Wall in the Mass Transfer Entry Region — G.H. Sedahmed, M. Nagy Soli-	
Blood Oxygenation in a Packed Column — Jose C. Merchuk	133	man and N.S. El-Kholy	693
Bubble Pumping in Cocurrent Gas-Liquid Flow and	100	Electrochemical Simulation of Heat and Mass Trans-	
its Effect Upon Conversion in Continuous Fer-		fer in Agrometeorology - P.H. Schuepp	164
mentation — Emil Wick	297	J. Peters and C.A. Shook	430
Capsule Hoist System for Vertical Transport of		Entrained Coal Gasifiers: Modeling the Particle	200
Coal and Other Mineral Solids — L.Y. Hwang, D.J. Wood and D.T. Kao	317	Acceleration — H. deLasa and L.K. Mok	658
Characterization of Zeolite Acidity I. The Cracking	OII	Entrainment of Particles from a Pilot Scale Fluid-	-
of 2 Mole % n-Butane over a Fixed Zeolite Bed		ized Bed — S.E. George and J.R. Grace	279
— H. Rastelli, Jr., B.M. Lok, J.A. Duisman, D.E.		Estimation of Critical Data by Equation of State — G. Schmidt and H. Wenzel	527
Earls and J.T. Mullhaupt		Etude des Isothermes d'Adsorption de Surfactants	
Velocity Distribution and Pressure Gradient in		Ioniques sur des Fibres de Laine Carbonisée —	
the Laminar-Laminar and Laminar-Turbulent		Francis Perineau, Jacques Molinier et Antoine	00
Regimes — Chester C-C Wang and M.E. Charles	668	Gaset Etude Théorique et Expérimentale de la Formation	82
Coherent Particle Oscillation in Fluidized Beds — T.E. Broadhurst and H.A. Becker	257	d'une Couche Limitée par Convection Libre dans	
Comparison of Spouting and Jetting in Round and	201	une Eau à Basse Température — P. Vasseur et	
Half-Round Fluidized Beds, A — D. Geldart, A.		L. Robillard	24
Hemsworth, R. Sundavadra and K.J. Whiting	638	Examination of a Model for Oscillating Heterogene- ously Catalyzed Reactions — David T. Lynch and	
Computation of Optimal Control Policy with Sin-	EET	Sieghard E. Wanke	766
gular Subarc — K.V. Reddy and Asghar Husain Computer Generated Time and Distance Values of	557	Experimental Determination of Air-H2S Equilibria	
Nutrient Constituents with Applications to Timed-		Under Claus Furnace Conditions — Howard A.	200
Release Capsules — C. Forgacs and R.N. O'Brien	465	Bennett and Axel Meisen Experimental Study of the Effect of Surface Char-	532
Concentration Distributions in Laminar Pipe Flow		acteristics and Material Thermal Properties on	
with Distorted Velocity Profiles — S.C. Jain and B.H. Chen	285	Dropwise Condensation, An — A.H. Abdelmessih,	
Control of a Distillation Column using Self-Tuning		Y. Rotenberg and A.W. Neumann	138
Regulators — S.A. Dahlqvist	118	Finite Difference Simulation of Die Swell for a	
Conversions and Temperature Rises in a Tabular Flow Reactor with Uncontrolled Wall Heat Trans-		Newtonian Fluid — G.A. Hill, C.A. Shook and M.N. Esmail	
fer — J.A. Golding, F. Vena and D. Gorowski	705	Finite Element Solution of Low Peclet Number	200
Dense and Extrusion Flow Regime in Gas-Solid		Fluid Flow in a Round Pipe with the Cauchy	
Transport, The - G.E. Klinzing and M.P. Mathur	590	Boundary Condition — S.L. Lee and G.J. Hwang	
Development of a Monitoring System for Ash De-		Flexible Solution Method for Generalized Equilibrium Stage Columns, A. — M.C. Li and R.J.	
posits on Boiler Tube Surfaces — A.K. Chambers, J.R. Wynnyckyj and E. Rhodes	230	Frost	
Development and Testing of a Method of Estimating	200	Flow Characteristics of a Laminar Swirling Imping-	
Sensible Heat Flux from Natural Surfaces Using		ing Jet: A Numerical Study — B. Huang, A.S.	
Remotely Sensed Surface Temperature — D.G.	100	Mujumdar and W.J.M. Douglas	
Leckie, T.A. Black and P.A. Murtha Dispersion and Hold-up in Bubble Columns — Com-	189	cular Cross-Section, The — Ravindra Datta and	
parison of Rigid and Flexible Spargers — Richard		Robert C. Rinker	268
C. Rice, Jorma M.I. Tupperainen and Robert M.		Flow Regime Boundaries for an Interior Subchannel	
Hedge	677	of a Horizontal 37-Element Bundle — A.M.M. Aly Fluidized Bed Retort for Oil Sand, A. — J.K. Don-	
Dispersion of Aqueous Polymer Solutions Injected from a Point Source into Turbulent Water Flows		nelly, R.G. Moore, D.W. Bennion and A.E. Trenk-	
— O.K. El Reidy and B. Latto	662	walder	68
Drag Reduction by Fibers — R.S. Sharma	3	Forced Convection Heat Transfer to Boiling Binary	
Drift in Intermittent Two-Phase Flow in Horizontal	200	Mixtures — T.R. Ramamohan, A. Somalingeswara Rao and N.S. Srinivas	
Pipes — Martin E. Weber	398	Formulae for Mass Median and Mass Mean Drop	
C.G. Morris and W.Y. Svrcek	392	Diameters — J. Monaghan, G.A. Hill and W.G.	
Effect of Fin Conductance on Laminar Heat Trans-		Soucey	
fer Characteristics of Internally Finned Tubes,	054	Gas Absorption at a Liquid Surface Agitated by	
The — H.M. Soliman	251	Vortex Rings — A. Rohatgi and M.H.I. Baird	308

Gas-Liquid Reactions in Packed Beds: The Effective-		Solutions in Laminar Flows — S. Ghoniem, M.	
ness of Static Hold-Up in Presence of Gas Side Resistance — V.S. Patwardhan	483	Moan, G. Chauveteau and C. Wolff	450
Gasification of Uranium-Bearing Black Shale in a	200	Methanation of Carbon Monoxide Catalyzed by Ni-	200
Circulating Fluidized Bed Reactor - J.C. Berg-		ckel/Zeolite Y and Nickel/n-alumina; Effect of	
gren, I. Bjerle, H. Eklund, H. Karlsson and O.		Reduction Time — S. Bhatia, N.N. Bakhshi and	
Svensson	614	J.F. Mathews	492
Gasification of Western Canadian Lignite Coals —	205	Method for Reducing the Deposition of Small Par-	
S.P.N. Van der Heijden and Arun Verma	325	ticles from Turbulent Fluid by Creating a Ther-	
Heat Flow Between Large Terrestrial Animals and		mal Gradient at the Surface, A — M.S. El-Sho- bokshy	155
the Cold Environment — R.J. Christopherson and B.A. Young	181	Model for Dehydrochlorination of 1,1,2,2-Tetrachlo-	200
Heat Transfer from Cylinders in Unsteady Flow —	101	roethane, A - M.B. Rao and D.S. Viswanath	620
T.E. Base, J.M. Patel and G.C. Valaitis	247	Modelling Radiation Interception by Strongly	
Heat Transfer of Polyethylene-Hydrocarbon Dis-		Clumped Vegetation — A Combined Monte-Carlo	
persions in Bubble Column Reactors — R. Michael		and Analytical Model — D.W.A. Whitfield	195
and K.H. Reichert	602	Modified General Dominant Eigenvalue Method for Convergence Acceleration Cyclic Systems, A. —	
Heat Transfer to Wires and Cylinders in High Tem-		M.A. Soliman	395
perature Surroundings — N.N. Sayegh and W.H. Gauvin	241	Momentum Transfer in Horizontal Multi-jet Liquid-	
Hierarchial Control of a Train of Continuous Poly-		Gas Ejector — M.N. Biswas and A.K. Mitra	634
merization Reactors - C. Kiparissides and S.R.		Novel Approach to Spray Drying Using Plasmas	
Ponnuswamy	752	of Water Vapour, A. — W.H. Gauvin	697
Hydrodynamics, Axial Mixing and Mass Transfer		Optimum Cycles for Falling Rate Processes -	
in Rotating Disk Contactors — S.H. Zang, X.D.	E/79	R.S.T. Ma and Norman Epstein	631
Ni and Y.F. Su	573	Overall Enthalpy Transfer Coefficient in Bubble	
mic Pulse Method — S.E. Wanke, B.K. Lotochin-		Cooling for Heated Water Stream in an Open Channel — Hisashi Miyashita, Shinkichi Yama-	
ski and H.C. Sidwell	357	guchi, Kazuo Kita, Fumimaru Ogino and Tokuro	
Hydrogen Production by the Catalytic Steam Re-		Mizushina	403
forming of Methanol - Part I The Thermo-		Packed Tube Columns: Hydrodynamics and Effec-	
dynamics — J.C. Amphlett, M.J. Evans, R.A.	790	tive Interfacial Area: Pall Rings and Multifila-	
Jones, R.F. Mann and R.D. Weir	720	ment Wire Gauge Packings — V.K. Patil and	
Zeolite Catalysts — Effect of Reduction and Cal-		M.M. Sharma	606
cination — Pramod K. Pajpai, Narendra N. Bakhshi		Penetration Model of Gas Absorption into Slurry Accompanied by an Instantaneous Irreversible	
and Joseph F. Mathews	715	Chemical Reaction — S. Uchida, M. Miyachi and	
Hydrotransport of Solids in Horizontal Pipes: Ef-		O. Ariga	560
fects of Solids Concentration and Particle Size on		Performances Comparées des Colonnes à garnissage	
the Deposit Velocity — W. Parzonka, J.M. Ken-	201	et à Contact Turbulent pour l'Absorption d'un	
chington and M.E. Charles	291	Gaz Acide — A. Miconnet, P. Guigon et JF.	
Steady-State Controller for Yeast Fermentation		Large	128
- N. Kalogerakis and T.J. Boyle	377	Plug Flow Model for Mass Transfer in Three-phase Fluidized Beds and Bubble Columns, The — M.	
Intraparticle Diffusion Effects for Liquid-Phase		Alvarez-Cuenca and M.A. Nerenberg	739
Hydrogenation of Cyclohexene on a Pt-Al ₂ O ₃ Ca-		Prediction of Error Estimates for Thermocouple	
talyst — K. Kawakami, M. Yamamoto and K.	4077	Attached to a Surface Using Differential Inequali-	
Kusunoki	407	ties — W.W. Martin and D.A. Lyn	236
State Analysis — B. Srinivas and Neal R. Amund-		Preliminary Experimental Investigation into the	
son	60	Air-Lift Pumping of Shear-Thinning Suspensions, A — Nigel I. Heywood, Robert A. Michalowicz	
Intraparticle Effects in Char Combustion III. Tran-		and Michael E. Charles	42
sient Studies — B. Srinivas and Neal R. Amund-		Production of Anhydrous 1,4-Dioxane from Ethylene	-
Son	728	Oxide in the Presence of Amberlyst 15 - John	
Intraparticle Mass Transfer in Weak Acid Ion- Exchanger — Takeshi Kataoka and Hiroyuki		Yamanis and Ronald W. Garland	310
Yoshida	475	Properties Photocatalytiques de Ta ₂ O ₅ /SiO ₂ — S.	710
Kinetics and Mechanisms of Deactivation by Fouling	200	Kaliaguine, M. Gnakoury and P.C. Roberge	710
of a Silica-Alumina Catalyst in the Gaseous Phase		Relative Hydrogen Saturation Factor and its Use	
Dehydration of Isoamyl Alcohol — Jose Corella		for Material Balance Analysis of Underground Coal Gasification, The — Wayne C. Edwards	332
and Jose M. Asua	506	Rheological Comparison of Four Blow Molding Re-	002
Kinetics of Catalyst Deactivation — J. Corella, J.M. Asua and J. Bilbao	647	sins — A. Garcia-Rejon, J.M. Dealy and M.R.	
Kinetics of Dissolved Oxygen Reaction in Aqueous	041	Kamal	76
Sodium Dithionite Solutions, The — Mikio Kawa-		Simplified Driving Force Model for Activated Car-	
goe and Campbell W. Robinson	471	bon Adsorption, A. — R.G. Peel and A. Benedek	688
Laminar Falling Film Flow and Heat Transfer		Simplified Procedure for Dimensional Analysis Em-	
Characteristics on Horizontal Tubes — J.T. Ro-		ploying SI Units, A — M.S. Quraishi and T.Z.	563
gers	213	Fahidy	909
Local Compositions and Local Surface Area Frac-		Solubility of Acetylene in Several Polar and Non- Polar Solvents and Solvent Mixtures — Y. Miyano	
tions: A Theoretical Discussion — C. Panayiotou and J.H. Vera	501	and W. Hayduk	746
Mathematic Modelling of Rotary Cement Kilns by	001	Spouted Bed Gasification of Western Canadian	
the Zone Method — H.K. Guruz and N. Bac	540	Coals - S.K. Foong, G. Cheng and A.P. Watkinson	625
Measurement of Binary Diffusion Coefficient Gases		Study of Wall Effects on the Motion of a Sphere in	
and Organic Vapours by Chromatography - B.K.		Viscoelastic Fluids, A. — R.P. Chhabra, C. Tiu	p.m.s
Pathak, V.N. Singh and P.C. Singh	362	and P.H.T. Uhlherr	771
Measuring and Modelling Forest Evapotranspiration	100	Surface and Interfacial Tension Measurement by	369
- D.L. Spittlehouse and T.A. Black	173	Drainage Methods — M.H.I. Baird and I. Nirdosh	900

Surface Shear Viscosity of Straight Chain (C ₁₅ to C ₂₀) Fatty Acids — M. Moo-Young, G.D. Fulford	366	Recirculating Pressurized Water Loop During Blowdown and Cold Water Injection — F.W. Bar-	
and Asoke K. Deysarkar	900	clay, R.E. Nieman and M.P. Hasinoff	201
sulphonates — Vladimir Hornof, Graham Neale		Treatment of Complex Silver Arsenide Concentrate	201
and Paul Bourgeois	554	in Nitric Acid System — Wasyl Kunda	347
Theoretical and Experimental Studies of Confined	001	Vapor-Liquid Equilibria for the Ternary System	
Vortex Flow — R.F. Reydon and W.H. Gauvin	14	n-Heptane/n-Propanol/l, Chlorobutane and its	
Theoretical Studies on the Gravity Drainage of		Constituent Binaries at 318.15 and 338.15 K -	
Heavy Oil During In-Situ Steam Heating - R.M.		F.A. Ashraf and J.H. Vera	89
Butler, G.S. McNab and H.Y. Lo	455	Vapor-Liquid Equilibrium Data for the Methanol-	
Thermal Conductivity of Oil Sands, The - G.A.		Water-Sulphuric Acid System at 101.3 kPa —	
Karim and A. Hanafi	461	K.L. Pinder	96
Thermal Decomposition of Pyrite in a Fluidized		Velocities of Entrainment in Liquid Fluidized Beds	
Bed — J.L.F. Monteiro	511	Solids — R.P. Vaid and P. Sen Gupta	35
Thermodynamic Availability Analysis of Fractional		Void Fraction and Pressure Drop in Two Phase	
Distillation with Vapour Compression — Hamdi	405	Stratified Flow — V. Kadambi	584
A. Mostafa	487	Wall Shear Stress and Mass Transfer in Vertical	
Three-Phase Fluidization: Some Knowledge Gaps	040	Two-Component Flow — B. Surgenor and S.	000
- Norman Epstein	649	Banerjee	223
Through Circulation Driving of Vanadium Pentoxide	642	Wet Oxidation of Glucose — J.M. Skaates, B.A.	E17
- T.S. Rajan and S.H. Ibrahim	044	Briggs, R.A. Lamparter and C.R. Baillod	517
Trajectory Analysis of Particle Deposition in Model Filters Composed of Parallel Fibers — Raymond			
C. Tsiang and Chi Tien	595	4 4 4	
O. Islang and On Tiell	000	* * *	

INDEX OF AUTHORS

		D	
Abdelmessih, A.H., Neumann, A.W. and Rotenberg,		Berggren, JC., Bjerle, I., Eklund, H., Karlsson, H.,	
Y. — An Experimental Study of the Effects of		and Svensson, O. — Gasification of Uranium-	
Surface Characteristics and Material Thermal Properties on Dropwise Condensation	138	Bearing Black Shale in a Circulating Fluidized	614
Alvarez-Cuenca, M. and Nerenberg, M.A. — The	100	Bed Reactor	492
Plug Flow Model for Mass Transfer in Three-		Bilbao, J. See Asua, J.M.	647
phase Fluidized Beds and Bubble Columns	739	Biswas, M.N. and Mitra, A.K Momentum Trans-	
Aly, A.M.M Flow Regime Boundaries for an		fer in Horizontal Multi-jet Liquid-Gas Ejector	634
Interior Subchannel of a Horizontal 37-Element		Bjerle, I. — See Berggren, JC	614
Bundle	158	Black, T.A., Leckie, D.G. and Murtha, P.A De-	
Amphlett, J.C., Evans, M.J., Jones, R.A. Mann, R.F.		velopment and Testing of a Method of Estimating	
and Weir, R.D. — Hydrogen Production by the		Sensible Heat Flux from National Surfaces Using	
Catalytic Steam Reforming of Methanol — Part I.	=00	Remotely Sensed Surface Temperatures	189
The Thermodynamics	720	Black, T.A. and Spittlehouse, D.L., — Measuring and	450
Amundson, Neal R. and Srinivas, B. — Intraparticle		Modelling Forest Evapotranspiration	173
Effects in Char Combustion II. Steady State	275	Bourgeois, Paul, Hornof, Vladimir and Neale, Gra-	
Analysis	60	ham — Synergistic Surfactant Mixtures Contain-	554
Effects in Char Combustion III. Transient Studies	728	Boyle, T.J. and Kalogerakis, N. — Implementation	554
	1 MO	and Demonstration of a Quasi-Steady-State Con-	
Ariga, O., Miyachi, M. and Uchida, S. — Penetration Model of Gas Absorption into Slurry Accompanied		troller for Yeast Fermentation	377
by an Instantaneous Irreversible Chemical Reac-		Briggs, B.A. — See Baillod, C.R	517
tion	560	Broadhurst, T.E See Becker, H.A	257
Ashraf, F.A. and Vera, J.H Vapor-Liquid Equili-	000	Butler, R.M., Lo, H.Y. and McNab, G.S Theoreti-	
bria for the Ternary System n-Heptane/n-Pro-		cal Studies on the Gravity Drainage of Heavy Oil	
panol/l, Chlorobutane and its Constituent Binaries		During In-Situ Steam Heating	455
at 318.15 and 338.15 K	89	Chambers, A.K., Rhodes, E. and Wynnyckyj, J.R.	
Asua, J.M., Bilbao, J. and Corella, J Kinetics		- Development of a Monitoring System for Ash	
of Catalyst Deactivation	647	Deposits on Boiler Tube Surfaces	230
Asua, Jose M. and Corella, Jose - Kinetics and		Charles, Michael E., Heywood, Nigel I. and Micha-	
Mechanism of Deactivation by Fouling of a Silica-		lowicz, Robert A. — A Preliminary Experimental	
Alumina Catalyst in the Gaseous Phase Dehydra-		Investigation into the Air-Lift Pumping of Shear-	
tion of Isoamyl Alcohol	506	Thinning Suspensions	42
Bac, N. and Guruz, H.K Mathematical Modelling		Charles, M.E., Kenchington, J.M. and Parzonka, W.	
of Rotary Cement Kilns by the Zone Method	540	Hydrotransport of Solids in Horizontal Pipes:	
Baillod, C.R., Briggs, B.A., Lamparter, R.A. and		Effects of Solids Concentration and Particle Size	
Skaates, J.M Wet Oxidation of Glucose	517	on the Deposit Velocity	291
Baird, M.H.I. and Nirdosh, I Surface and Interfa-		Charles, M.E. and Wang, Chester C-C — Co-Current	
cial tension Measurement by Drainage Methods	369	Stratified Flow of Immiscible Liquids: Velocity	
Baird, M.H.I. and Rohatgi, A Gas Absorption		Distribution and Pressure Gradient in the Lami-	220
at a Liquid Surface Agitated by Vortex Rings	303	nar-Laminar and Laminar-Turbulent Regimes	668
Bajpai, Pramod K., Bakhshi, Narendra N. and Ma-		Chauveteau, G., Ghoniem, S., Moan, M. and Wolff,	
thews, Joseph F Hydrogenation of Carbon		C. — Mechanical Degradation of Semi-Dilute- Polymer Solutions in Laminar Flows	450
Monoxide over Nickel Zeolite Catalysts - Effect		Chen, B.H. and Jain, S.C. — Concentration Distribu-	450
of Reduction and Calcination	715	tions in Laminar Pipe Flow with Distorted Ve-	
Bakhshi, N.N., Bhatia, S. and Mathews, J.F. — Me-		locity Profiles	285
thanation of Carbon Monoxide Catalyzed by Ni-		Cheng, G., Foong, S.K. and Watkinson, A.P	
ckel/Zeolite Y and Nickel/η-alumina; Effect of	400	Spouted Bed Gasification of Western Canadian	
Reduction Time	492	Coals	625
Bakhshi, Narendra N. — See Bajpai, Pramod K	715	Chhabra, R.P., Tiu, C. and Uhlherr, P.H.T A	
Banerjee, S. and Surgenor, B. — Wall Shear Stress and Mass Transfer in Vertical Two-Component		Study of Wall Effects on the Motion of a Sphere	-
Flow	223	in Viscoelastic Fluids	771
Barclay, F.W., Hasinoff, M.P. and Nieman, R.E		Christopherson, R.J. and Young, B.A. — Heat Flow	
Transient Heat Transfer and Fluid Mechanics of		Between Large Terrestrial Animals and the Cold	101
a Recirculating Pressurized Water Loop During		Environment	181 506
Blowdown and Cold Water Injection	201	Corella, Jose — See Asua, Jose M	
Barreiro, E., deLasa, H.I., Errazu, A. and Solioz, S.		Corella, J. — See Asua, J.M.	647
 Analysis of Fluidized Bed Catalytic Cracking 		Dahlqvist, S.A. — Control of a Distillation Column	110
Regenerator Models in an Industrial Scale Unit	549	Using Self-Tuning Regulators	118
Base, T.E., Patel, J.M. and Valaitis, G.C. — Heat	0.45	Darby, Ron and Mallett, W. — The Effect of Saline Concentration on the Viscous Properties of Lig-	
Transfer from Cylinders in Unsteady Flow	247	nite Water Suspensions	341
Beausejour, Denis, Leduy, Anh and Ramalho, Rubens		Datta, Ravindra and Rinker, Robert C. — The Flow	041
S. — Batch Cultivation of Kluyveromyces Fragilis in Cheese Whey	552	of Rarefied Gases Through Long Tubes of Circular	
Becker, H.A. and Broadhurst, T.E. — Coherent Par-	002	Cross-Section	268
ticle Oscillation in Fluidized Beds	257	Davis, Mark, Fairweather, Graeme and Yamanis,	
Benedek, A. and Peel, R.G. — A Simplified Driving		John - Annular Bed Reactor-Methanation of	
Force Model for Activated Carbon Adsorption	688	Carbon Dioxide	497
Bennett, Howard A. and Meisen, Axel - Experi-		Dealy, J.M., Garcia-Rejon, A. and Kamal, M.R. —	
mental Determination of Air-H2S Equilibria Under		Rheological Comparison of Four Blow Molding	
Claus Furnace Conditions	532	Resins	76
Bennion, D.W., Donnelly, J.K., Moore, R.G. and		deLasa, H.I. — See Barreiro, E	549
Trenkwalder, A.E. — A Fluidized Bed Retort for	00	deLasa, H. and Mok, L.K. — Entrained Coal Gasifiers: Modeling the Particle Acceleration	655
Oil Sand	68	modeling the rathere Acceleration	000

Deysarkar, Asoke K., Fulford, G.D. and Moo-Young,		formance Comparies des Colonnes à Carnissage	
M. — Surface Shear Viscosity of Straight Chain	366	formance Comparées des Colonnes à Garnissage et à Contact Turbulent pour l'Absorption d'un	
C ₁₅ to C ₂₀) Fatty Acids	68	Gaz Acide	128
Douglas, W.J.M., Huang, B. and Mujumdar, A.S. —		Guruz, H.K See Bac, N	540
Flow Characteristics of a Laminar Swirling Im-		Hanafi, A. and Karim, G.A The Thermal Con-	
pinging Jet: A Numerical Study	423	ductivity of Oil Sands	461
Earls, D.E. — See Duisman, J.A		Hartland, S. and Vohra, D.K. — Effect of Geome-	
Edwards, Wayne C. — The Relative Hydrogen Satu-		trical Arrangement and Interdrop Forces on	438
ration Factor and Its Use for Material Balance	332	Coalescence Time	201
Analysis of Underground Coal Gasification Eklund, H. — See Berggren, JC	614	Hayduk, W. and Miyano, Y. — Solubility of Acety-	201
Ekmann, James M. and Klinzing, George E. —	0	lene in Several Polar and Non-Polar Solvents	
Analysis of Coal-Oil Mixture Sedimentation by		Mixtures	746
Modified Continuity Wave Theory	417	Hedge, Robyn M., Rice, Richard C. and Tupperainen,	
El-Kholy, N.S., Sedahmed, G.H. and Soliman, M.		Jorma M.I. — Dispersion and Hold-Up in Bubble	
Nagy — Effect of Surface Roughness on the Rate		Columns — Comparison of Rigid and Flexible	677
of Mass Transfer to a Pipe Wall in the Mass	602	Spargers Hemsworth, A. See Geldart, D.	677 638
Transfer Entry Region	693	Heywood, Nigel I. See Charles, Michael E.	42
El Reidy, O.K. and Latto, B. — Dispersion of		Hibino, Shin-ichi, Tanaka, Yasumitsu and Tsuge,	
Aqueous Polymer Solutions Injected from a Point Source into Turbulent Water Flows	662	Hideki - Effect of the Physical Properties of	
	00	Gas on the Volume of Bubble Formed from a	
El-Shobokshy, M.S. — A Method for Reducing the Deposition of Small Particles from Turbulent		Submerged Single Orifice	569
Fluid by Creating a Thermal Gradient at the Sur-		Hill, G.A. — See Esmail, M.N.	100
face	155	Hill, G.A., Monaghan, J. and Soucey, W.G. — For-	
Epstein, Norman - Three-Phase Fluidization: Some		mulae for Mass Median and Mass Mean Drop Diameters	776
Knowledge Gaps	649	Hornof, Vladimir — See Bourgeois, Paul	554
Epstein, Norman and Ma., R.S.T. — Optimum Cycles		Huang, B. — See Douglas, W.J.M.	423
for Falling Rate Processes	631	Husain, Asghar and Reddy, K.V. — Computation	
Errazu, A See Barreiro, E	549	of Optimal Control Policy with Singular Subarc	557
Esmail, M.N., Hill, G.A. and Shook, C.A Finite		Hwang, G.J. and Lee, S.L. — Finite Element Solu-	
Difference Simulation of Die Swell for a New-		tion of Low Peclet Number Fluid Flow in a Round	
tonian Fluid	100	Pipe with the Cauchy Boundary Condition	760
Evans, M.J. — See Amphlett, J.C.	720	Hwang, L.Y., Kao, D.T. and Wood, D.J Capsule	
Fahidy, T.Z. and Quraishi, M.S. — A Simplified		Hoist System for Vertical Transport of Coal and	
Procedure for Dimensional Analysis Employing	563	Other Mineral Solids	317
SI UnitsFairweather, Graeme — See Davis, Mark	497	Ibrahim, S.H. and Rajan, T.S Through Circula-	
Foong, S.K. — See Cheng, G.	625	tion Driving of Vanadium Pentoxide	642
Forgacs, C. and O'Brien, R.N Computer Gen-		Iguchi, A., Koide, K., Miyachi, M. and Uchida, S.	
erated Time and Distance Values of Nutrient		- Effect of Solid Particles in Liquid-phase on	040
Constituents with Applications to Timed-Release		Liquid-side Mass Transfer Coefficient	640
Capsules	465	Jain, S.C. — See Chen, B.H.	285
Frost, R.J. and Li, M.C. — A Flexible Solution		Jones, R.A. — See Amphlett, J.C.	720
Method for Generalized Equilibrium Stage Col-	900	Kadambi, V. — Void Fraction and Pressure Drop in Two-Phase Stratified Flow	584
umns	388	Kaliaguine, S. — See Gnakoury, M	710
Fulford, G.D. — See Deysarkar, Asoke K.	366	Kalogerakis, N. — See Boyle, T.J.	377
Garcia-Rejon, A. — See Dealy, J.M.	76	Kamal, M.R See Dealy, J.M	76
Garland, Ronald W. and Yamanis, John — Produc-		Kao, D.T. — See Hwang, L.Y.	317
tion of Anhydrous 1,4 Dioxane from Ethylene Oxide in the Presence of Amberlyst 15	310	Karim, G.A. — See Hanafi, A.	461
~	010	Karlsson, H. — See Berggren, JC.	614
Gaset, Antoine, Molinier, Jacques et Périneau, Francis — Etude des Isothermes d'Adsorption de Sur-		Kataoka, Takeshi and Yoshida, Hiroyuki — Intra- particle Mass Transfer in Weak Acid-Ion Ex-	
factants Ioniques ssur des Fibres de Laine Car-		changer	475
bonisée	82	Kawagoe, Mikio and Robinson, Campbell W The	
Gauvin, W.H A Novel Approach to Spray Drying		Kinetics of Dissolved Oxygen Reaction in Aqueous	
Using Plasmas of Water Vapour	697	Soldium Dithionite Solutions	471
Gauvin, W.H. and Reydon, R.F Theoretical and		Kawakami, K., Kusunoki, K. and Yamamoto, M.	
Experimental Studies of Confined Vortex Flow	14	Intraparticle Diffusion Effects for Liquid-Phase	
Gauvin, W.H. and Sayegh, N.N Heat Transfer		Hydrogenation of Cyclohexane on a Pt-Al ₂ O ₃ Catalysts	407
to Wires and Cylinders in High-Temperature		Kenchington, J.M. — See Charles, M.E.	291
Surroundings	241	Kiparissides, C. and Ponnuswamy, S.R Hierar-	
Geldart, D., Hemsworth, A., Sundavadra, R. and		chial Control of a Train of Continuous Poly-	
Whiting, K.J. — A Comparison of Spouting and	000	merization Reactors	752
Jetting in Round and Half-round Fluidized Beds	638	Kita, Kazuo, Ogino, Fuminaru, Miyashita, Hisashi,	
George, S.E. and Grace, J.R. — Entrainment of	970	Mizushima, Tokura and Yamaguchi, Shinkichi —	
Particles from a Pilot Scale	279 450	Overall Enthalpy Transfer Coefficient in Bubble Cooling for Heated Water Stream in an Open	
Gnakoury, M., Kaliaguine, S. and Roberge, P.C. —	200	Channel	403
Propriétés Photocatalytiques de Ta-O ₅ /SiO ₂	710	Klinzing, George E. — See Ekmann, James M	417
Golding, J.A., Gorowski, D. and Vena, F Conver-		Klinzing, G.E. and Mathur, M.P The Dense and	
sions and Temperature Rises in a Tubular Flow		Extrusion Flow Regime in Gas-Solid Transport	590
Reactor with Uncontrolled Wall Transfer	705	Koide, K. — See Iguchi, A.	640
Gorowski, D. — See Golding, J.A	705	Kunda, Wasyl — Treatment of Complex Silver Ar-	247
diace, s.it see deorge, S.E	279	senide Concentrate in Nitric Acid System	347

Kusunoki, K. — See Kawakami, K	407	Patwardhan, V.S. — Gas-Liquid Reactions in	
Lamparter, R.A. — See Baillod, C.R	517	Packed Beds: The Effectiveness of Static Hold-	400
Large, JF. — See Guigon, P.	128	Up in Presence of Gas Side Resistance	483 688
Latto, B. — See El Reidy, O.K.	662	Peel, R.G. — See Benedek, A.	
Leckie, D.G. — See Black, T.A.		Périneau, Francis — See Gaset, Antoine	82
Leduy, Anh — See Beauséjour, Denis Lee, S.L. — See Hwang, G.J	522 760	Peters, J. and Shook, C.A. — Electromagnetic	430
Li, M.C. — See Frost, R.J.	388	Sensing of Slurry Concentration Pinder, K.L. — Vapor-Liquid Equilibrium Data for	200
Lo, H.Y. — See Butler, R.M.	455	the Methanol-Water-Sulphuric Acid System at	
Lotochinski, B.K., Sidwell, H.C. and Wanke, S.E. —	200	101.3 kPa	96
Hydrogen Adsorption Measurements by the Dyna-		Ponnuswamy, S.R. — See Kiparissides, C	752
mic Pulse Method	357		563
Lyn, D.A. and Martin, W.W. — Prediction of Error	001	Quraishi, M.S. — See Fahidy, T.Z	
Estimates for Thermocouple Attached to a Sur-		Rajan, T.S. — See Ibrahim, S.H.	642
face Using Differential Inequalities	236	Ramalho, Rubens S. — See Beauséjour, Denis	522
Lynch, David T. and Wanke, Sieghard E Exam-		Ramamohan, T.R., Rao, Somalingeswara, A. and	
ination of a Model for Oscillating Heterogeneously		Srinivas, N.S. — Forced Convection Heat Trans-	400
Catalyzed Reactions	766	fer to Boiling Binary Mixtures	400
Ma, R.S.T. — See Epstein, Norman	631	Rao, M.B. and Viswanath, D.S. — A Model for	
Mallett, Mark W. — See Darby, Ron	341	Dehydrochlorination of 1,1,2,2 — Tetrachloro-	690
Mann, R.F. — See Amphlett, J.C.	720	ethane	620 400
Martin, W.W. — See Lyn, D.A	236	Rao, Somalingeswara, A. — See Ramamohan, T.R.	557
Mathews, Joseph F See Bajpai, Pramod K	715	Reichert, K.H. — See Michael, R	602
Mathews, J.F. — See Bakhshi, N.N.	492		
Mathur, M.P. — See Klinzing, G.E	590	Reydon, R.F. — See Gauvin, W.H.	14
McNab, G.S See Butler, R.M	455	Rhodes, E. — See Chambers, A.K.	230
Meisen, Axel — See Bennett, Howard A	532	Rhodes, E., Shoukri, M. and Yanchis, R.J. — Effect	
Merchuk, Jose C Blood Oxygenation in a Packed		of Heat Flux on Pressure Drop in Low Pressure	140
Column	133	Flow Boiling in a Horizontal Tube	149
Michael, R. and Reichert, K.H Heat Transfer		Rice, Richard C. — See Hedge, Robyn M Rinker, Robert C. — See Datta, Ravindra	268
of Polyethylene-Hydrocarbon Dispersions in Bub-		Roberge, P.C. — See Gnakoury, M	200
ble Column Reactor	602	Robillard, L. and Vasseur, P. — Etude Théorique	
Michalowicz, Robert A See Charles, Michael E.	42	et Expérimentale de la Formation d'une Couche	
Miconnet, A See Guigon, P	128	Limitée par Convection Libre dans une Eau à	
Mitra, A.K. — See Biswas, M.N.	634	Basse Température	24
Miyachi, M. — See Ariga, O	560	Robinson, Campbell W. — See Kawagoe, Mikio	471
		Rogers, J.T. — Laminar Falling Film Flow and	***
Miyachi, M. — See Iguchi, A.	640	Heat Transfer Characteristics on Horizontal Tubes	213
Miyano, Y. — See Hayduk, W	746	Rohatgi, A. — See Baird, M.H.I.	303
Miyashita, Hisashi — See Kita, Kazuo	403	Rotenberg, Y See Abdelmessih, A.H	138
Mizushina, Tokuro - See Kita, Kazuo	403	Sayegh, N.N See Gauvin, W.H	241
Moan, M. — See Chauveteau, G	450	Schmidt, G. and Wenzel, H. — Estimation of Critical	
Mok, L.K. — See de Lasa, H	658	Data by Equation of State	527
Molinier, Jacques — See Gaset, Antoine	82	Schuepp, P.H Electrochemical Simulation of	
Monaghan, J. — See Hill, G.A.	776	Heat and Mass Transfer in Agrometeorology	164
Monteiro, J.L.F. — Thermal Decomposition of Py-	*10	Sedahmed, G.H See El-Kholy, N.S	
rite in a Fluidized Bed	511	Sen Gupta, P. and Vaid, R.P Velocities of En-	
Moore, R.G. — See Bennion, D.W.	68	trainment in Liquid Fluidized Beds of Mixed	
Moo-Young, M. — See Deysarkar, Asoke K.	366	Solids	35
Morris, C.G. and Svrcek, W.Y. — Dynamic Simula-	000	Seoane, Xose L. — See Arcoya, Adolfo	
tion of Multicomponent Distillation	382	Sharma, M.M. — See Patil, V.K	606
Mostafa, Hamdi A. — Thermodynamic Availability	002	Sharma, R.S. — Drag Reduction by Fibers	3
Analysis of Fractional Distillation with Vapour		Shook, C.A. — See Esmail, M.N	100
Compression	487	Shook, C.A. — See Peters, J	430
Mujumdar, A.S. See Douglas, W.J.M	423	Shoukri, M. — See Rhodes, E.	149
Murtha, P.A See Black, T.A.	189	Sidwell, H.C. — See Lotochinski, B.K.	357
Neale, Graham — See Bourgeois, Paul	554	Singh, P.C. — See Pathak, B.K.	362
	739	Singh, V.N. — See Pathak, B.K.	362 517
Nerenberg, M.A. — See Alvarez-Cuenca, M	138	Skaates, J.M. — See Baillod, C.R.	917
Ni, X.D. Su, Y.F. and Zhang, S.H Hydrodyna-		Smith de Sucre, V. and Watkinson, A.P. — Anodic	52
mics, Axial Mixing and Mass Transfer in Rotating		Oxidation of Phenol for Waste Treatment	02
Disk Contactors	573	Laminar Heat Transfer Characteristics of Inter-	
Nieman, R.E. — See Barclay, F.W.	201	nally Finned Tubes	251
Nirdosh, I See Baird, M.H.I.	369	Soliman, M. Nagy — See El-Kholy	MOA
O'Brien, R.N. — See Forgacs, C.	465	Soliman, M.A. — A Modified General Dominant	
Ogino, Fuminaru — See Kita, Kazuo	403	Eigenvalue Method for Convergence Acceleration	
Panayiotou, C. and Vera, J.H. — Local Compositions		of Cyclic Systems	395
and Local Surface Area Fractions: A Theoretical		Solioz, S. — See Barreiro, E	549
Discussion	501	Soucey, W.G. — See Hill, G.A.	
Parzonka, W. — See Charles, M.E.	291	Spittlehouse, D.L. — See Black, T.A.	173
Patel, J.M. — See Base, T.E.	247	Srinivas, B. — See Amundson, Neal R.	60
Pathak, B.K., Singh, P.C. and Singh, V.N Meas-		Srinivas, B. — See Amundson, Neal R	
urement of Binary Diffusion Coefficient of Gases		Srinivas, N.S. — See Ramamohan, T.R.	400
and Organic Vapors by Chromatography	362	Surgenor, B. — See Banerjee, S	223
Patil, V.K. and Sharma, M.M Packed Tube		Su, Y.F. — See Ni, X.D	573
Columns: Hydrodynamics and Effective Interfa-		Sundavadra, R See Geldart, D	638
cial Area: Pall Rings and Multifilament Wire		Svensson, O. — See Berggren, J.C	614
Gauge Packings	606	Svrcek, W.Y See Morris, C.G.	382

Tanaka, Yasumitsu — See Hibino, Shin-ichi 56	69
Taylor, P.A., Tu, T. and Wright, J.D. — The Ap-	
plication of Robust and Non-interacting Control	
Schemes to a Heat-Exchanger Stirred Tank	
Process 10	09
Tien, Chi and Tsiang, Raymond C Trajectory	
Analysis of Particle Deposition in Model Filters	
Composed of Parallel Fibers 59	95
Tiu, C See Chhabra, R.P 7'	71
	68
	95
Tsuge, Hideki - See Hibino, Shin-ichi 50	69
Tu, T. — See Taylor, P.A 16	09
Tupperainen, Jorma M.I See Hedge, Robyn M 6'	77
Uchida, S. — See Ariga, O 50	60
Century Di Dec 28 activity and international and	40
	71
Vaid, R.P. — See Sen Gupta, P	35
Valaitis, G.C. — See Base, T.E 24	47
Van der Heijden, S.P.N. and Verma, Arun — Gasi-	
fication of Western Canadian Lignite Coals 32	25
1 4000 41, 21 000 2100 2100 2100 2100 2100 2100	24
Vena, F See Golding, J.A 70	05
Total Coo Indiana, a last million	89
rolly orally wood a directly for the first the	01
	25
the state of the s	20
1 011 11 1000 1101 110	38
	68
Wanke, S.E. — See Lotochinski, B.K 35	57

wanke, Siegnard E. — See Lynch, David I	100
Watkinson, A.P See Cheng, G	625
Watkinson, A.P See Smith de Sucre, V	52
Weber, Martin E. — Drift in Intermittent Two-	-
Phase Flow in Horizontal Pipes	398
	720
Weir, R.D. — See Amphlett, J.C.	-
Wenzel, H. — See Schmidt, G	527
Whitfield, D.W.A Modelling Radiation Inter-	
ception by Strongly Clumped Vegetation — a	
Combined Monte-Carlo and Analytical Method	195
Whiting, K.J See Geldart, D	638
Wick, Emil - Bubble Pumping in Cocurrent Gas-	
Liquid Flow and its Effect Upon Conversion in	
Continuous Fermentation	297
Wolff, C. — See Chauveteau, G	450
Wood, D.J. — See Hwang, L.Y.	317
Wright, J.D. — See Taylor, P.A.	109
Wynnyckyj, J.R. — See Chambers, A.K.	230
	403
Yamaguchi, Shinkichi — See Kita, Kazuo	
Yamamoto, M. — See Kawakami, K	407
Yamanis, John — See Davis, Mark	497
Yamanis, John — See Garland, Ronald W	310
Yanchis, R.J. — See Rhodes, E	149
Yoshida, Hiroyuki — See Kataoka, Takeshi	475
Young, B.A. — See Christopherson, R.J	181
Zhang, S.H See Ni, X.D.	573

* * *

The Canadian Journal of Chemical Engineering

Subject Index - 1981

Absorption, Gas, in Columns with Fixed and Moving	190	Catalytic Cracking Regenerator Models for Fluidized
Packings Absorption of Gas at a Liquid Surface Agitated by	128	Bed
Vortex Rings	303	Catalytic Steam Reformation of Methanol, Hydrogen
Absorption Stage Columns, Flexible Solution Method	000	Production by
for	308	Cauchy Boundary Condition, Solution of Low Peclet
Acceleration of Particles in an Entrained Reactor,		Number Fluid Flow 7
Modeling of	658	Char Combustion, Steady State Analysis of Intra-
Acetic Anhydride-Water Reaction in Tubular Flow		particle Effects in
Reactor	705	Chlorine Catalyst in Dehydrochlorination of 1,1,2,2-
Acetylene Solubility in Polar and Non-Polar Solvents	746	Tetrachloroethane 6
Adsorption Isotherms of Ionic Surfactants on Wool	82	1,Chlorobutane/n-Propanol/n-Heptane Ternary and Binary Isobaric Vapor-Liquid Equilibria
Adsorption of Hydrogen, Measurements by the	04	Chromatography for Measurement of Binary Diffu-
Dynamic Pulse Method for	357	sion Coefficients of Gases and Organic Vapours 3
Agrometeorology, Electrochemical Simulation of	001	Circulating Fluidized Bed Reactor, Gasification of
Heat and Mass Transfer in	164	Uranium-bearing Black Shale in 6
Air-H2S Equilibria under Claus Furnace Conditions	532	Claus Furnace Conditions, Determination of Air-H2S
Air-lift Pumping of Shear-Thinning Suspensions	42	Equilibria under 5
Alcohol Conversion by Continuous Fermentation,		Cleaning or Regeneration Time in Falling Rate
Effect of Bubble Pumping	297	Processes 6
Amberlyst 15 in Production of Anhydrous, 1,4-	910	Coal and Mineral Solids Vertical Transport with
Dioxane from Ethylene Oxide	310	Capsule Hoist System
Anhydrous 1,4-Dioxane Production from Ethylene Oxide with Amberlyst 15	310	Coal Gasification in an Entrained Reactor, Modeling the Particle Acceleration
Animals, Rates of Heat Loss and Resistance to	020	Coal Gasification in Spouted Bed
Heat Loss in Cold Environments for	181	Coal-Oil Mixture Sedimentation Analysis by Modified
Annular Bed Reactor - Methanation of CO2	497	Continuity Wave Theory 4
Anodic Oxidation of Phenol for Waste Water Treat-		Coalescence Time, Effect of Geometrical Arrange-
ment	52	ment and Interdrop Forces on 4
Asbestos Fibers, Drag Reduction by	3	Coherent Particle Oscillation in Fluidized Beds 2
Ash Deposits on Boiler Tube Surfaces, Monitoring of	230	Columns with Fixed and Moving Packings, Com-
Athabasca Oil Sands, Thermal Conductivity of	461 697	parison of
Atomized Suspension Technique, New Solutions for Axial Mixing, Hydrodynamics and Mass Transfer in	031	Combustion of Char, Steady State Analysis of Intra- particle Effects in
Rotating Disc Contactors	573	Concentration Distributions in Laminar Pipe Flow
		with Distorted Velocity Profiles 2
Batch Cultivation of Kluyveromyces Fragilis in		Condensation of Water-Vapor in Dropwise Mode,
Cheese Whey	522	Effects of Surface Characteristics and Thermal
Black Shale Gasification in a Circulating Fluidized		Properties on 1
Bed Reactor	614	Control of Yeast Fermentation 3
Blood Oxygenation in Packed Column	133	Control Schemes in Heat-Exchanger Stirred Tank
Blow Molding Resins, Rheological Comparison of Binary Diffusion Coefficient Measurement of Gases	76	Process
and Organic Vapours by Chromatography	362	in Cocurrent Gas-Liquid Flow
Blowdown and Cold Water Injection in Candu	002	Control of a Distillation Column Using Self-Tuning
Systems, Heat Transfer and Fluid Mechanics of	201	Regulators 1
Boiler Tube Surfaces, Monitoring of Ash Deposits		Control of a Train of Continuous Polymerization
on	230	Reactors 7
Boiling Binary Mixtures, Forced Convection Heat		Control Policy with Singular Subarc 5
Transfer to	400	Convection, Free, by Isothermal Vertical Plate in a
Bubble Column Reactors, Heat Transfer of Polyethy-	600	Large Volume of Water
lene-Hydrocarbon Dispersions in	602 677	Convergence Acceleration of Cyclic Systems by
Bubble Columns, Plug Flow Model for Mass Transfer	011	Modified Eigenvalue Method
in	739	Critical Data Estimation by Equation of State 5
Bubble Cooling, Overall Enthalpy Transfer Coeffi-		CSTR's in Series, Control of
cient in	403	Cubic Equation of State, Estimation of Critical
Bubble Pumping in Cocurrent Gas-Liquid Flow	297	Data by 5
Bubble Volume Formed from a Submerged Orifice,		Cultivation of Kluyveromyces Fragilis in Cheese
Effect of Gas Physical Properties	569	Whey
Candy Nuclear Passtons Park	901	Cyclic Systems, a Modified Eigenvalue Method for
Candu Nuclear Reactors, Performance and Safety of Candu Reactor Accident Sequences, Assessment of	201 213	Convergence Acceleration of
Capsule Hoist System for Vertical Transport of	210	Cyclohexane, Photocatalytic Oxidation of 7
Coal and Mineral Solids	317	Deactivation of Catalyst in Gaseous Phase Dehy-
Carbon Dioxide Absorption at a Liquid Surface	0.4	dration of Isoamyl Alcohol, Kinetics and Me-
Agitated by Vortex Rings	303	chanism of
Carbon Monoxide Hydrogenation over Nickel Zeolite		Deactivation of Catalyst, Kinetics of 6
Catalysts	715	Dehydration of Isoamyl Alcohol in Gaseous Phase,
Catalyst Deactivation Kinetics	647	Deactivation by Fouling of Catalyst in 5
Catalytic Behaviour of Three Nickel Catalysts in	105	Dehydrochlorination of 1,1,2,2-Tetrachloroethane,
Methanation Reaction	492	Model for 6

Dense and Extrusion Flow Regime in Gas-Solid	F00	Fin Conductance Effect on Laminar Heat Transfer	251
Transport	590	Characteristics of Internally Finned Tubes Fiber Efficiency of Model Filters Composed of Paral-	201
Particle Size on	291	lel Fibers	595
Deposition Analysis in Model Filters of Parallel Fibers	595	Finite Element Solution of Low Peclet Number Fluid Flow	760
Deposition of Small Particles from Turbulent Fluid, Reducing of	155	Flocculated Kaolin Shear-Thinning Suspensions, Airlift Pumping of	42
Die Swell Simulation for Newtonian Fluid	100	Flow Characteristics of a Laminar Swirling Imping-	423
Differential Inequalities, Prediction of Error Esti- mates for Surface Attached Thermocouples	236	Flow of Rarefied Gas through Long Tubes of Cir-	440
Diffusion Coefficient Measurement for Gases and	200	cular Cross-section	268
Organic Vapours by Chromatography	362	Flow Reactor with Uncontrolled Wall Heat Transfer	705
Dimensional Analysis Employing SI Units, Sim-	563	Flow Regime Maps for an Interior Subchannel of a Horizontal 37-Element Bundle	158
plified Method for	900	Flow Regimes in Gas-Solid Transport	590
Amberlyst 15	310	Flow, Studies of Confined Vortex	14
Dispersion and Hold-up in Bubble Columns	677	Fluid Flow at Low Peclet Numbers, Solution for Fluid Mechanics and Transient Heat Transfer of a	760
Distillation Column, Control using Self-Tuning Reg- ulators	118	Recirculating Loop in Candu Systems	201
Distillation Stage Columns, Solution Method for	388	Fluid Mechanics of Three-Phase Fluidization	649
Distorted Velocity Profile in Laminar Pipe Flow,		Fluidized Bed Catalytic Cracking, Regenerator	F 40
Concentration Distributions in	285	Models Analysis	549 279
Distributor Zone in Three-Phase Beds and Bubble Columns, Mass Transfer Studies for	739	Fluidized Bed Retort for Oil Sands	68
Double-Film Model, Intraparticle Effects in Steady	, ,	Fluidized Beds, Coherent Particle Oscillation in	256
State Char Combustion	60	Fluidized Beds, a Comparison of Spouting and Jetting	638
Drag Reduction by Water-Fiber and Polymer-Fiber Systems	3	in	511
Drainage Methods for Surface and Interfacial Ten-	0	Fluidized Beds, Three-Phase, and Bubble Columns,	
sion Measurements	369	Model for Mass Transfer in	739
Drift in Intermittent Two-Phase Flow in Horizontal Pipes	398	Fluidized Liquid Beds of Mixed Solids, Entrainment Velocities in	35
Dropwise Condensation, Studies of Effects of Surface	090	Fluidization in Three-Phase Systems	649
Characteristics and on Thermal Properties	138	Forced Convection Heat Transfer to Boiling Binary	
Drying by Spray Technique using Plasmas	697	Mixtures	400
Drying of Vanadium Pentoxide by Through Circulation	642	Forced Convective Heat Transfer from Heated Cylinders	247
Dynamic Pulse Method, Hydrogen Adsorption Meas-	042	Forest Evapotranspiration, Measuring and Modelling	
urements by	357	of	173
Dynamic Simulation of Multicomponent Distillation Electrochemical Mass Transfer Measurements on	382	Fouling of Catalyst in Gaseous Phase Dehydration of Isoamyl Alcohol, Deactivation by	506
Pipe Walls	693	Fractional Distillation with Vapour Compression,	500
		Analysis using Energy	487
Electrochemical Oxidation of Phenol for Waste Water Treatment	52	Free Convection by Isothermal Vertical Plate in a Large Volume of Water	24
Electrochemical Techniques in Measuring Mass	02	Frictional Losses in Gas-Solid Transport System	590
Transfer Rates in Vertical Gas-Liquid Flow	223	Frictional Pressure Drop in Two-Phase Flow System,	
Electromagnetic Sensing of Slurry Concentration	430	Effect of Heat Flux	149
Enhanced Oil Recovery by Surfactant Flooding Enthalpy Transfer Coefficient in Bubble Cooling	554 403	G Al Timb A Timb Code A that I have	
Entrained Coal Gasifiers: Modeling the Particle		Gas Absorption at a Liquid Surface Agitated by Vortex Rings	303
Acceleration	658	Gas Absorption in Columns with Fixed and Moving	
Bed	279	Packings	128
Entrainment Velocities in Liquid Fluidized Beds of		Gas Absorption into Slurry, Penetration Model of Gas-Fluidized Beds, Coherent Particle Oscillation in	560 256
Mixed Solids	35	Gasification of Coal in Entrained Reactor, Modeling	200
Equation of State, Critical Data Estimation by Equilibrium Stage Columns, Solution Method for	527 388	the Particle Acceleration	658
Error Estimates for Thermocouple Attached to a	500	Gasification of Uranium-Bearing Black Shale in Circulating Fluidized Bed Reactor	614
Surface	236	Gasification of Western Canadian Lignite Coal	325
Ethylene Oxide in Production of Anhydrous 1,4- Dioxane	310	Gasification of Western Canadian Coals in Spouted	
Evapotranspiration of Forest, Measuring and Model-	010	Gos Liquid Popations in Packed Rods	625 483
ling of	173	Gas-Liquid Reactions in Packed Beds	400
Energy Concept for Analyzing Fractional Distillation with Vapour Compression	407	Regimes	590
Extracting of Oil from Oil Sands in Fluidized Bed	487	"Geometric Mean Free Path" Concept for Rarefield	000
Retort	68	Gas Flow in Long Tube	268 517
Extrusion Flow Regime in Gas Solid Transport	590	Gravity Drainage of Heavy Oil during In-Situ Steam	
Falling Rate Processes, Optimum Cycles for	631	Heating, Theoretical Studies on	455
Fatty Straight Chain Acid (C15 to C20), Surface			
Shear Viscosity of	366	Heat Exchanger Stirred Tank Process, Control	100
Fermentation of Yeast, Control ofFermentation Conversion, Bubble Pumping in Cocur-	377	Schemes for	109
rent Gas-Liquid Flow Effect upon	297	the Cold Environment	181
First Systems Drog Reduction by	465	Heat Flux Effect on Pressure Drop in Low Pressure	140
Fiber Systems, Drag Reduction by	3	Flow Boiling in a Horizontal Tube	149

il

Heat Flux Meters for Monitoring of Ash Deposits on Boiler Tube Surfaces	230	Kynch's Modified Continuity Wave Theory for Anal- ysis of Coal-Oil Mixture Sedimentation	417
Heat Transfer by Forced Convection to Boiling	200	ysis of coal-off mixture Seumenature	211
Binary Mixtures	400	Laminar Heat Transfer in Internally Finned Tubes,	
Heat Transfer Characteristics and Laminar Falling Film Flow on Horizontal Tubes	213	Fin Coductance Effect on	251
Heat Transfer From Cylinders in Unsteady Flow	247	Laminar Falling Film Flow and Heat Transfer	210
Heat Transfer of Polyethylene-Hydrocarbon Disper-		Characteristics on Horizontal Tubes	213
sions in Bubble Column Reactors	602	Laminar Pipe Flow with Distorted Velocity Profiles, Concentration Distributions in	285
Heat Transfer to Wires and Cylinders in High Temperature Surroundings	241	Laminar Swirling Impinging Jet Flow Character-	200
Heavy Oil Gravity Drainage During In-Situ Steam	241	istics	423
Heating, Theoretical Studies onn-Heptane/n-Propanol/1, Chlorobutane Ternary and	455	Langmuir-Hinshelwood Mechnisms in Self-Sustained Oscillations in Heterogeneously Catalyzed Re-	nee
Binary Vapor-Liquid Equilibria, Isobaric	89	actions Leaching of Complex Silver Arsenide Concentrate in	766
Heterogeneously Catalyzed Reactions, Oscillating of Hierarchical Control of Train of Continuous Poly-	766	Nitric Acid System	347
merization Reactors	752	Lignite Coals Gasification	325
Holp-up and Dispersion in Bubble Columns	677	Lignite Water Suspensions Viscous Properties, Effect of Saline Concentration on	341
Horizontal Multi-jet Liquid-Gas Ejector, Momentum	mar.	Lignosulphonates in Synergistic Surfactant Mixtures	554
Transfer in	635	Liquid Fluidized Beds of Mixed Solids, Entrainment	
Flow in	398	Velocities in	35
Horizontal Tubes, Laminar Falling Film Flow and		Liquid-Gas Multi-Jet Ejector, Momentum Transfer in Liquid-Phase Hydrogenation of Cyclohexene on a Pt-	635
Heat Transfer Characteristics on	213 532	Al ₂ O ₃ Catalyst, Intraparticle Diffusion Effects for	407
Hydrocarbon-Polyethylene Dispersions in Bubble	002	Liquid-side Mass Transfer Coefficient, Effect of	
Column Reactors, Heat Transfer of	602	Solid Particles on	640 501
Hydrodynamics, Axial Mixing and Mass Transfer in		Local Compositions and Local Surface Area Fractions Low Peclet Number Fluid Flow in a Round Pipe,	301
Rotating Disk Contactors	573	Finite Element Solution for	760
Pulse Method	357		
Hydrogen Bonding Factors, Correlation of Solubili-		Mandhane's Flow Map in Flow Pattern Analysis	
ties of Gases by use of	746	for Low Pressure Flow Boiling in a Horizontal	140
Hydrogen Production by the Catalytic Steam Reforming of Methanol	720	Tube	149 573
Hydrogen Relative Saturation Factor for Analysis	.120	Mass Transfer and Wall Shear Stress in Vertical	010
of Underground Coal Gasification	332	Two-Component Flow	223
Hydrogenation of CO over Nickel Zeolite Catalysts Hydrogenation of Cyclohexene on Pt-Al ₂ O ₃ Catalyst,	715	Mass Transfer in a Rough Tube, Rates of	693
Intraparticle Diffusion Effect For	407	Mass Transfer in Three-Phase Fluidized Beds and Bubble Columns, Plug Flow Model for	739
Hydrotransport of Solids in Horizontal Pipes	291	Material Balance Analysis of Underground Coal	
Impinging Laminar Swirling Jet Flow Character-		Gasification	332
istics	423	Measurement Error Estimates for Thermocouple	236
Interfacial and Surface Tension Measurement by		Attached to a Surface	200
Drainage Methods	369	Solutions in Laminar Flows	450
bustion	60	Methanation of CO Catalyzed by Nickel/Zeolite Y	400
Interdrop Forces and Geometrical Arrangement		and Nickel/n-Alumina	492 715
Effects on Coalescence Time	438	Methanation of CO ₂	497
Intermittent Two-Phase Flow in Horizontal Pipes, Drift in	398	Methanol Catalytic Steam Reforming in Hydrogen	500
In-Situ Oil Production from the Tar Sands, Studies		Production	720
on Gravity Drainage	455	librium at 101.3 kPa	96
Intraparticle Diffusion Effects for Liquid-Phase Hydrogenation of Cyclohexene on a Pt-Al ₂ O ₃		Micellar Flooding in Enhanced Oil Recovery	554
Catalyst	407	Micrometeorological Methods of Measuring and Modelling Forest Evapotranspiration	173
Ionic Surfactants on Wool Fibres, Adsorption Isoe-		Mineral Solids Vertical Transport Using Capsule	110
therms	82	Hoist System	317
Fouling In	506	Minimum Entrainment Velocities in Liquid Fluidized	95
		Beds of Mixed Solids	35
Jet Flow Characteristics, Impinging Laminar Swir-	423	Coal-Oil Mixture Sedimentation	417
Jets, Predictions of the Surface Shear	100	Modified Eigenvalue Method for Convergence Ac-	
Jetting and Spouting Comparison in Round and Half-		Molten Polymers, Comparison of Rheological Pro-	395
round Fluidized Beds	638	perties	76
Kinetics and Mechanism of Deactivation by Catalyst		Momentum Transfer in Horizontal Multi-Jet Liquid-	
Fouling in Gaseous Phase Dehydration of Isoamyl	SAR	Gas Ejector	635
Alcohol	506	Monitoring System for Ash Deposits on Boiler Tube Surfaces	230
roethane	620	Multicomponent Distillation, Dynamic Simulation of	382
Kinetics of Dissolved Oxygen Reaction in Aqueous	4574	Multifilament Wire Gauge Packing, Hydrodynamics	000
Sodium Dithionite Solutions	471	and Effective Interfacial Area for	606
Whey	522	CSTR's	752
"Knudsen Minimum" Prediction for Rarified Gas	000	Multivariable Control of Distillation Column Using	***
Flow in Long Tube	268	Self-Tuning Regulators	118

Multivariable Control Schemes in Heat-Exchanger Stirred Tank Process	109	Pumping, Air-Lift, of Shear-Thinning Suspensions Pyrite Thermal Decomposition in a Fluidized Bed	42 511
Natural Convection by Isothermal Vertical Plate in		Pyrrhotites Forming by Thermal Decomposition of	511
a Large Volume of Water	24	Pyrite in a Fluidized Bed	511
Newtonian Fluid, Simulation of Die Swell for	100	Quasi-Steady-State Controller Implementation for	
Nickel Zeolite Catalysts in CO Hydrogenation Nickel/Zeolite Y and Nickel/η-Alumina Catalyst in	715	Yeast Fermentation	377
CO Methanation	492	Radiation Interception by Strongly Clumped Vegeta-	
Nitric Acid System, Treatment of Complex Silver Arsenide Concentration in	347	tion, Modelling of	195
Non-Hydrolyzed Polyacrylamide Semi-Dilute Solution	450	Radiative Interchange Stimulation in Rotary Cement Kilns	540
in Laminar Flows, Mechanical Degradation of Non-Polar and Polar Solvents, Acetylene Solubility	400	Rarefied Gas Flow Through Long Tubes of Circular	268
in	746	Cross-Section	200
Nutrient Constituents, Time & Distance Values for	405	Transfer	705
Time Release Capsules	465	Reduction Time Effect in Methanation of CO Catal-	492
and Safety of	201	yzed by Nickel/Zeolite and Nickel/η-Alumina Regenerator Models for Fluidized Bed	549
	20	Remote Sensing Techniques for Sensible Heat Flux	
Oil Sands, Fluidized Bed Retort ForOil Sands, Thermal Conductivity of	68 461	from Natural Surfaces	189
Olefin Polymerization in Bubble Column Reactors	401	Relative Hydrogen Saturation Factor in Underground Coal Gasification	332
with Ziegler Catalysts, Heat Transfer Measure-		Resin Phase Mass Transfer in a Weak Acid Ion-	002
ments for	602	Exchanger	475
Organic Vapours and Gases Binary Diffusion Coefficient Measurements	362	Retorting of Oil Sands in Fluidized Bed	68
Oscillating Heterogeneously Catalyzed Reactions,	002	Rheological Behaviour of Concentrated Suspensions of Lignite in Water, Saline Concentration Effect	
Model for	766	on	341
Oscillation Frequency for Particles in Fluidized Beds	256	Rhelogical Comparison of Four Blow Molding Resins	76
Overall Enthalpy Transfer Coefficient in Bubble Cooling	403	Rotary Cement Kilns, Modelling of	540
Oxidation of Glucose in Aqueous Medium	517	Mixing and Mass Transfer in	573
Oxidation of Phenol for Waste Water Treatment Oxidation Reactions, Catalyzed Heterogeneously,	52	Roughness Effects on Mass Transfer Rates to a Pipe Wall	693
Oscillations of	766		
Oxygen Dissolved in Aqueous Sodium Dithionite Solutions, Kinetics of	471	Saline Concentration Effect on the Viscous Properties of Lignite Water Suspensions	341
Oxygenation of Blood in Packed Column	133	Sedimentation of Coal-Oil Mixture, Analysis by Modi-	0.41
		fied Continuity Wave Theory	417
Packed Beds, Gas Liquid Reactions in Packed Column, Blood Oxygenation in	483	Self-Sustained Oscillations with Catalyzed Oxidation	700
Packed Bed Absorption Columns, Fixed and Moving	133 128	Reactions Self-Tuning Regulators, Control of a Distillation	766
Packed Tube Columns, Hydrodynamics and Effective		Column by Use of	118
Interfacial Area in	606	Sensible Heat Flux from Natural Surfaces, Estima-	100
Pall Rings and Multifilament Wire Gauge Packings, Hydrodynamics and Effective Interfacial Area	606	tion of	189
Particle Acceleration in Entrained Coal Gasifiers,	000	trol of	752
Modeling of	658	Shear-Thinning Suspensions, Air-Lift Pumping of	42
Particle Deposition in Model Filters Composed of Parallel Fibers	595	Shear Viscosity of Straight Chain (C ₁₅ to C ₂₀) Fatty	366
Particles Entrainment from a Pilot Scale Fluidized	000	Acids Shrinking Core Model for Intraparticle Mass Trans-	900
Bed	279	fer in Weak-Acid Ion-Exchanger	475
Particle Oscillation in Fluidized Beds Penetration Model of Gas Absorption into Slurry	256	Silica Alumina Catalyst Fouling in Gaseous Phase	
with an Instantaneous Irreversible Reaction	560	Dehydration of Isoamyl Alcohol Silica Batch Fluidized Bed for Thermal Decomposi-	506
Phenol Anodic Oxidation for Waste Water Treatment	52	tion of Pyrite	511
Photocatalytic Properties of Deposited Ta ₂ O ₅ on	510	Silver Arsenide Complex Concentrate in Nitric Acid	
Silica	710 697	System, Treatment of	347
Plug Flow Model for Mass Transfer in Three-Phase	001	Singular Subare for Computation of Optimum Con- trol Policy	557
Fluidized Beds and Bubble Columns	739	Simulation of Die Swell for Newtonian Fluids	100
Polyacrylamide Semi-Dilute Solution in Laminar Flow, Mechanical Degradation of	450	Simulation of Multicomponent Distillation	382
Polar and Non-Polar Solvents, Acetylene Solubility	450	Slurry Concentration by Electromagnetic Sensing Slurry, Penetration Model of Gas Absorption into	430 560
in	746	Soil-Atmosphere and Soil-Crop Heat and Mass Trans-	000
Polyethylene-Hydrocarbon Dispersions in Bubble	222	fer, Predictive Models	164
Column Reactors, Heat Transfer of Polymer-Fiber and Water-Fiber Systems, Drag Re-	602	Solar Radiation Penetration into Plant, Modelling of	195
duction by	3	Sodium Dithionite Aqueous Solutions, Kinetics of Dissolved Oxygen Reaction in	471
Polymer Solutions in Laminar Flows, Mechanical		Solid Particles Effect on Liquid-side Mass Transfer	
Degradation of	450	Coefficient	640
Polymers for Blow Molding, Rheological Properties	752	Solids Hydrotransport in Horizontal Pipes Solubility of Acetylene in Polar and Non-Polar Sol-	291
of	76	vents and Solvent Mixtures	746
n-Propanol/n-Heptane/1, Chlorobutane Ternary and	0.0	Spargers in Bubble Columns, Comparison of	677
Binary Isobaric Vapor-Liquid Equilibria Pulse Method for Hydrogen Adsorption Measure-	89	Spouting and Jetting Comparison in Round and	620
ments	357	Half-round Fluidized Beds	638

Spray Drying Using Plasmas of Water Vapour Stage Columns, Flexible Solution Method for	697 388	Turbulent Contact in Packed Columns for Gas Absorption
Static Hold-up Effectiveness in Gas-Liquid Reactions		Two-phase Intermittent Flow in Horizontal Pipes,
in Packed Beds	483	Drift in
Shear Viscosity of Stratified Two-Phase Flow, Void Fraction and Pres-	366	sure Drop in
sure Drop in	584	Underground Coal Gasification, Material Balance
Submerged Single Orifice, Volume of Bubble Formed	002	Analysis for
from	569	Uranium-Bearing Black Shale Gasification in a Cir-
Sulphuric Acid-Water-Methanol Vapor-Liquid Equi- librium at 101.3 kPa	96	culating Fluidized Bed Reactor 614
Surface and Interfacial Tension Measurement by		Vanadium Pentoxide, Through-Circulation Drying of 642
Drainage Methods	369	Vapor-Liquid Equilibrium, Methanol-Water-Sulphuric Acid System at 101.3 kPa
perties Effects on Drainage Condensation	138	Vapor-Liquid Equilibria for n-Heptane/n-Propanol/1,
Surface Roughness Effect on Mass Transfer Rate		Chlorobutane and Binaries, Isobaric 85
to a Pipe Wall	693	Vegetation, Modelling of Solar Radiation Penetra- tion into
Surface Shear Viscosity of Straight Chains (C ₁₅ to C ₂₀) Fatty Acids	366	Velocities of Entrainment in Liquid Fluidized Beds
Surfactant Flooding in Enhanced Oil Recovery	554	of Mixed Solids 38
Surfactants, Ionic Adsorption Isotherms on Wool		Vertical Transport of Coal and Mineral Solids using
Fibres	82	Capsule Hoist System 31
Suspensions, Air-Life Pumping of Flocculated	42	Viscous Dissipation Loss in Shear Flow Showing Degradation of Polymer Solutions
Kaolin	46	Viscous Properties of Lignite Water Suspensions,
istics	423	Effect of Saline Concentration on 341
Synergistic Surfactant Mixtures Containing Ligno-		Vortex Flow, Studies of Confined 14
sulphonates	554	Vortex Rings, Gas Absorption at a Liquid Surface Agitated by
Tantalum Oxide, Photocatalytic Properties of	710	777 11 (1) (1) (1) (1) (1) (1)
Temperature Profiles in a Tubular Flow Reactor 1,1,2,2-Tetrachloroethane Dehydrochlorination	705 620	Wall Shear Stress and Mass Transfer in Vertical Two-Component Flow
Thermal Conductivity of Oil Sands	461	Two-Component Flow
Thermal Decomposition of Pyrite in a Fluidized		of Phenol in
Bed	511	Water-Acetic Anhydride Reaction in Tubular Flow-
Thermal Properties of Material and Surface Char-	100	Reactor 708
acteristics Effect on Dropwise Condensation Thermocouple Attached to a Surface, Error Esti-	138	Water Desalination Process Using Reverse Osmosis, Concentration Distributions in Laminar Pipe Flow
mates for	236	in
Distillation with Vapour Compression	487	Reduction by
Thermodynamics of Hydrogen Production by the		Water-Methanol-Sulphuric Acid Vapour Equilibrium
Catalytic Steam Reforming of Methanol	720	at 101.3 kPa 96
Thermogravimetric Analysis of Ta ₂ O ₅ and V ₂ O ₅ Catalysis	710	Weak Acid Ion-Exchanger, Intraparticle Mass Trans- fer in
Thermophoretic Phenomena for Reducing Deposition		Western Canadian Lignite Coals Gasification 325
of Small Particles from Turbulent Flow	155	Western Canadian Coals Gasification in Spouted Bed 625
Three-phase Fluidized Beds, Plug Flow Model for	649	Wet Oxidation of Glucose
Mass Transfer in	739	factants on
Through-Circulation Drying of Vanadium Pentoxide	642	
Timed-Release Capsules, Calculation of Time & Dis-		Yeast Fermentation, Quasi-Steady-State Controller
tance Values of Nutrient Constituents Transient Heat Transfer and Fluid Mechanics in	465	Implementation for 377
Candu Systems	201	Zeolite Catalysts in Fluidized Bed Regenerators 549
Tubular Flow Reactor with Uncontrolled Wall Heat	-47	Zone Method Mathematical Modelling of Rotary
Transfer	705	Cement Kilns



